Beyond the #justice hashtags

Understanding digital participation after police-involved Deaths

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HCIL

How is justice expressed through tweets in the context of events that reflect police violence against citizens?

What is the impact of using different methods for detecting relevant content?

- Hashtags
- Machine Learning

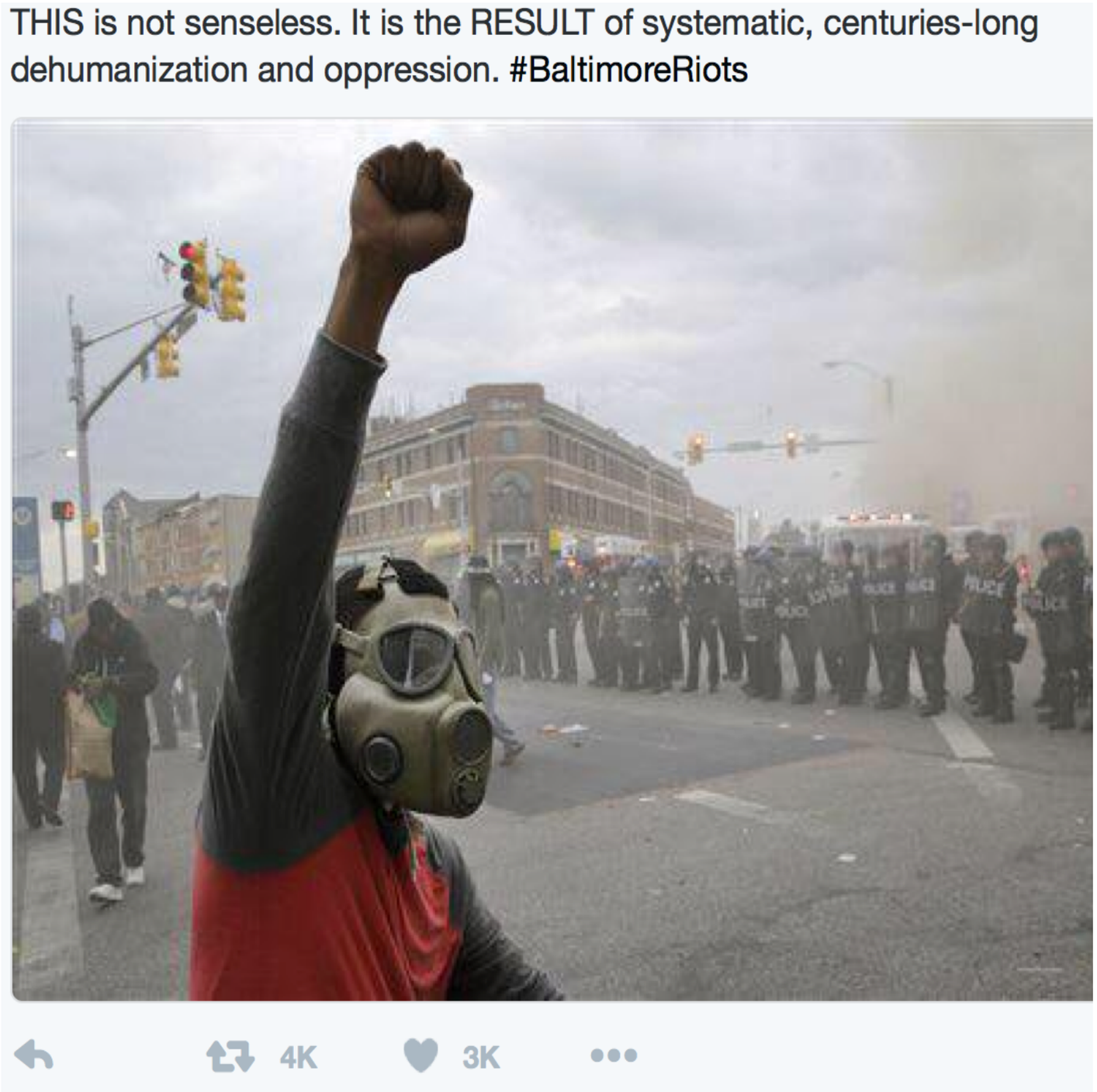
Detecting justice discourse

Two methods

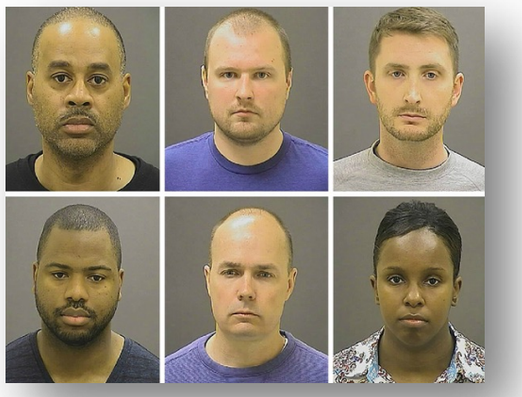
- Hashtags (text included by user)
- Machine learning (automated classification via algorithm)

Impact

- Amount of activity
- Number of participants
- Network size and structure



18 April onward:
Protests



1 May:
Charges filed against 6 officers involved

Pre-death | Riots and Unrest | Post-Riot

12 April:
Arrest of Freddie Gray by BPD

19 April:
Death of Freddie Gray (attributed to injuries sustained during arrest/transport by police)

27 April:
Funeral of Freddie Gray
Riots, looting
Curfew, National Guard called out

Justice

Public perceptions of justice (esp. procedural justice)

- Compliance with the law
- Cooperation with the police

Physical health, mental health, and a host of other social consequences

Sunshine and Tyler, 2003; Schulhofer et al., 2011

Social media is relevant to justice

Digital collective action (Van Laer & Van Aelst, 2009)

Relationship between social media and activities on the ground

- Political activity
  - Voting (Vissers and Stolle, 2014; Vitak 2010)
- Social movements
  - #Occupy (Conover, 2013), #BlackLivesMatter (De Choudury, 2016; Olteanu, 2015)
- Protests
  - Ferguson (He et al, 2015; Hong et al, 2016, Bonilla and Rosa, 2015)

"..shaping the nature of civic engagement in the digital age."
-Gordon et al, 2013

Identifying relevant social media

Hashtags

- Important and commonly used approach
- Potential to introduce bias (Tufecki, 2014)

Data

Twitter Historical Powertrack

Geolocated tweets (GNIP) from Baltimore, MD

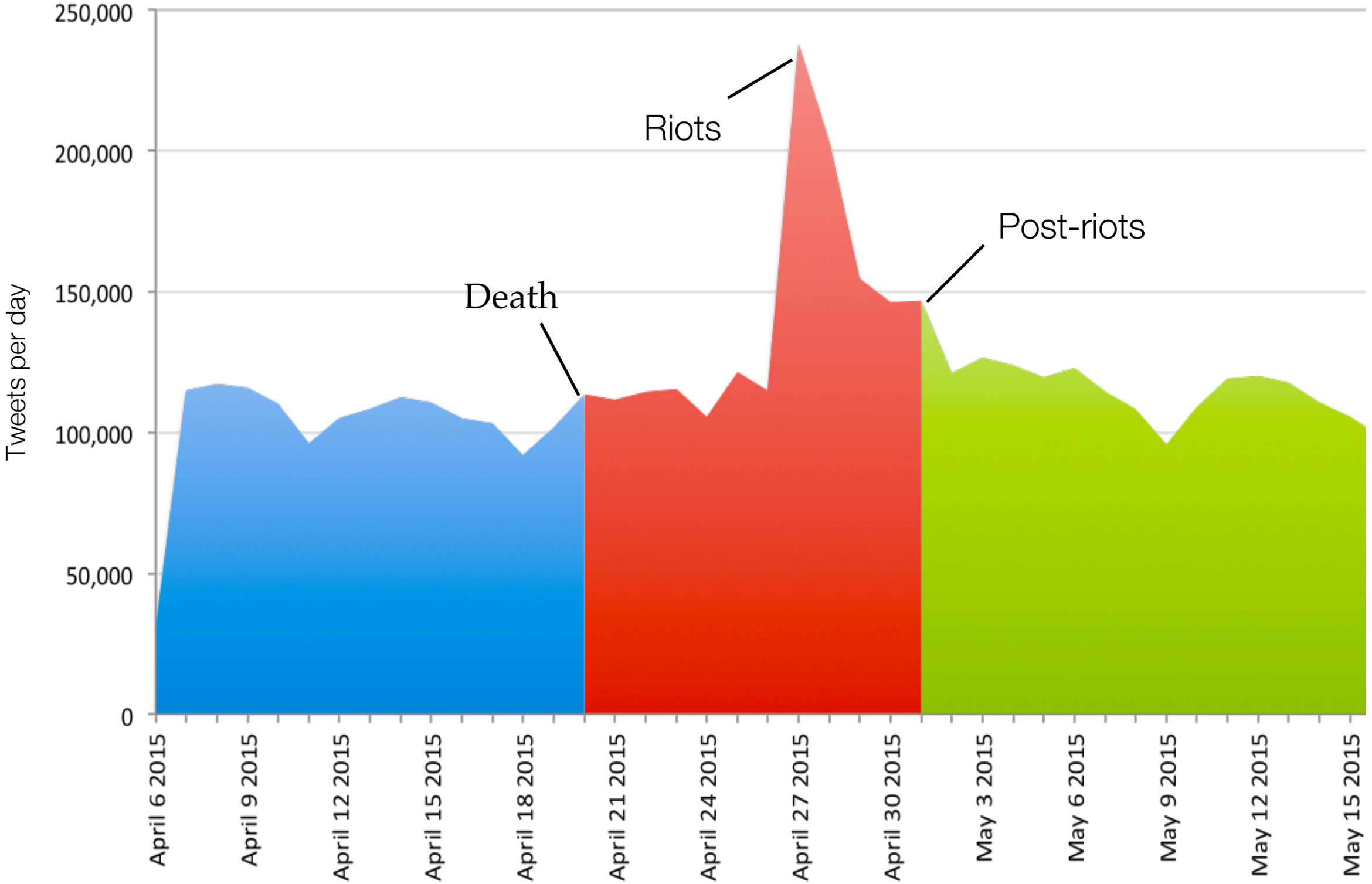
- >5 million
- 5 April to 14 May 2015

Unique users

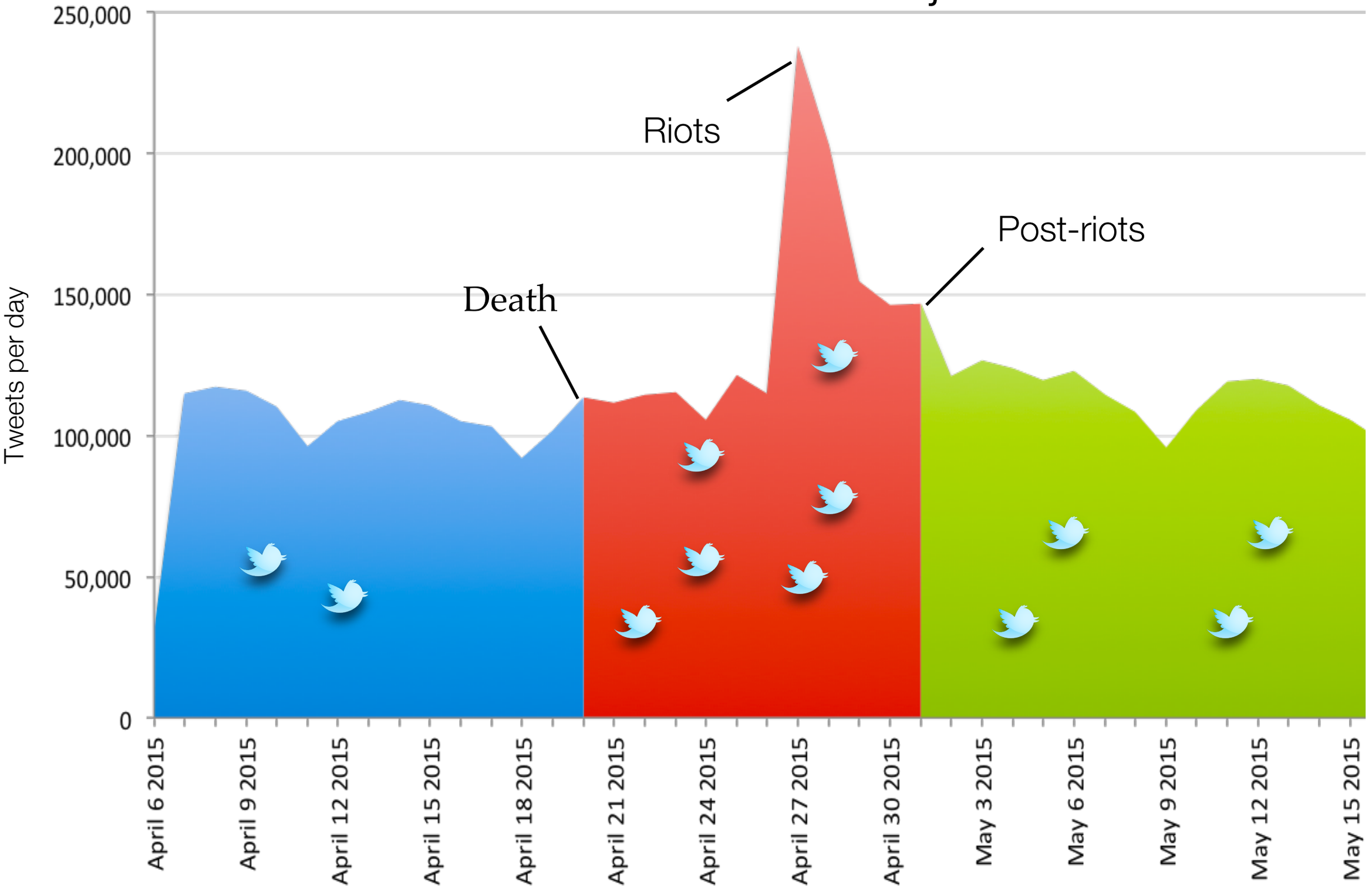
- 68k

Vast majority of tweets unrelated to justice

Tweets in Baltimore



Which tweets are about justice?



Hashtag-based justice communications

Tweets containing “justice” string in hashtag

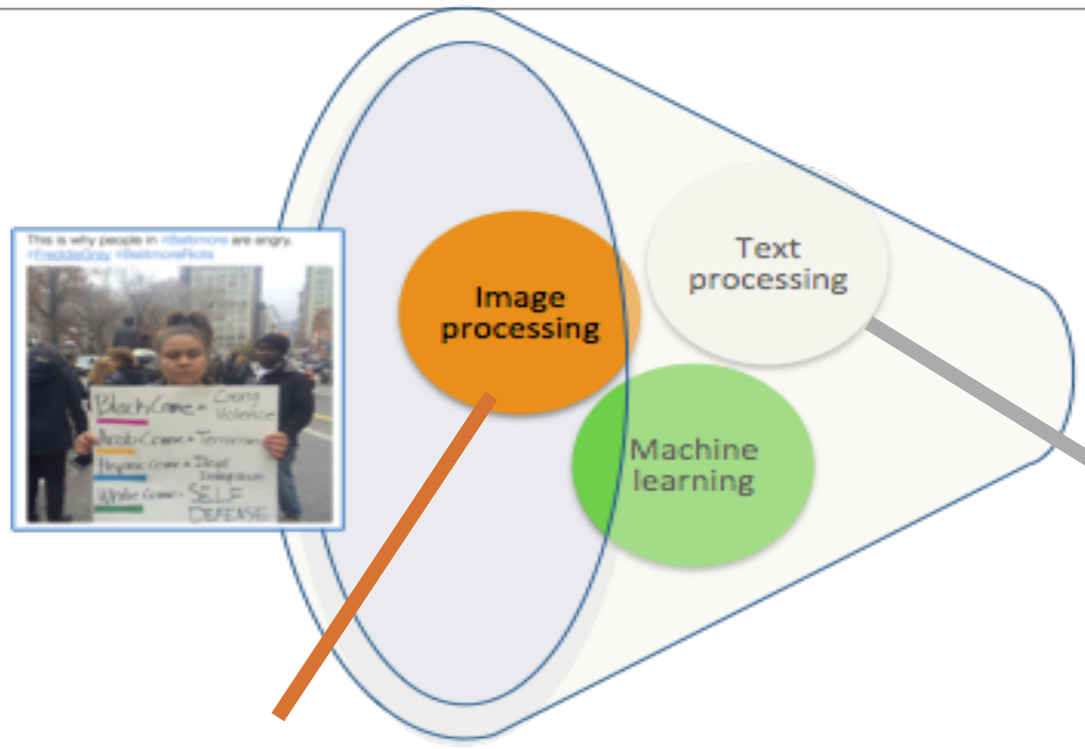
- ◇ over 300 unique hashtags (~220 ignoring capitalization)
- ◇ dozens of variants on “justice for Freddie Gray” alone
  - ◇ #JusticesForFreddieGray, #JUSTICES4FREDDIEGRAY, #JusticeFreddieGray, #justiceforfreddygrey, #JusticeForFreddyGray, #JusticeForFreddy, #justiceforfreddiegrey, #JusticeForFreddieGray, #JusticeForFreddieGra, #JusticeForFreddieG, #JusticeForFreddie, #justiceforefreddiegrey, #Justice4Fredrick,#Justice4FreddyGrey, #justice4freddygray, #Justice4FreddieVideo,#justice4freddiegrey, #Justice4FreddieGray, #Justice4FreddieG, #justice4freddieEveryday, #Justice4Freddie, #freddieGrayJustice

Machine learning: justice-related communications

Tweets discussing

- Events/actions of actors in criminal justice system (includes elected officials that drive criminal justice and policing)
- Policies, processes and procedures
- Responses by individuals or groups to these actions, policies, or procedures

Machine learning to identify relevant tweets



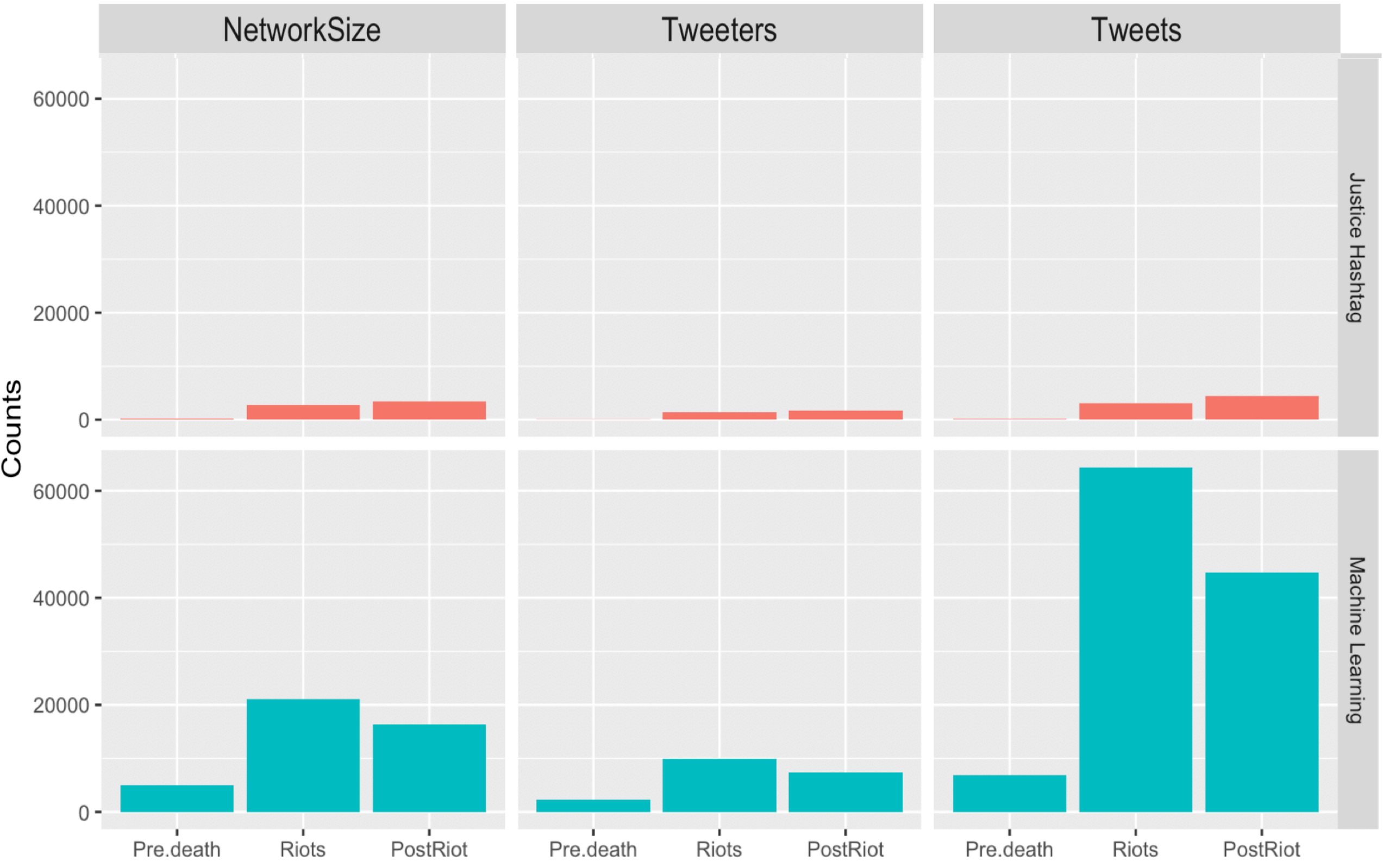
Peaceful Protest: 0.84

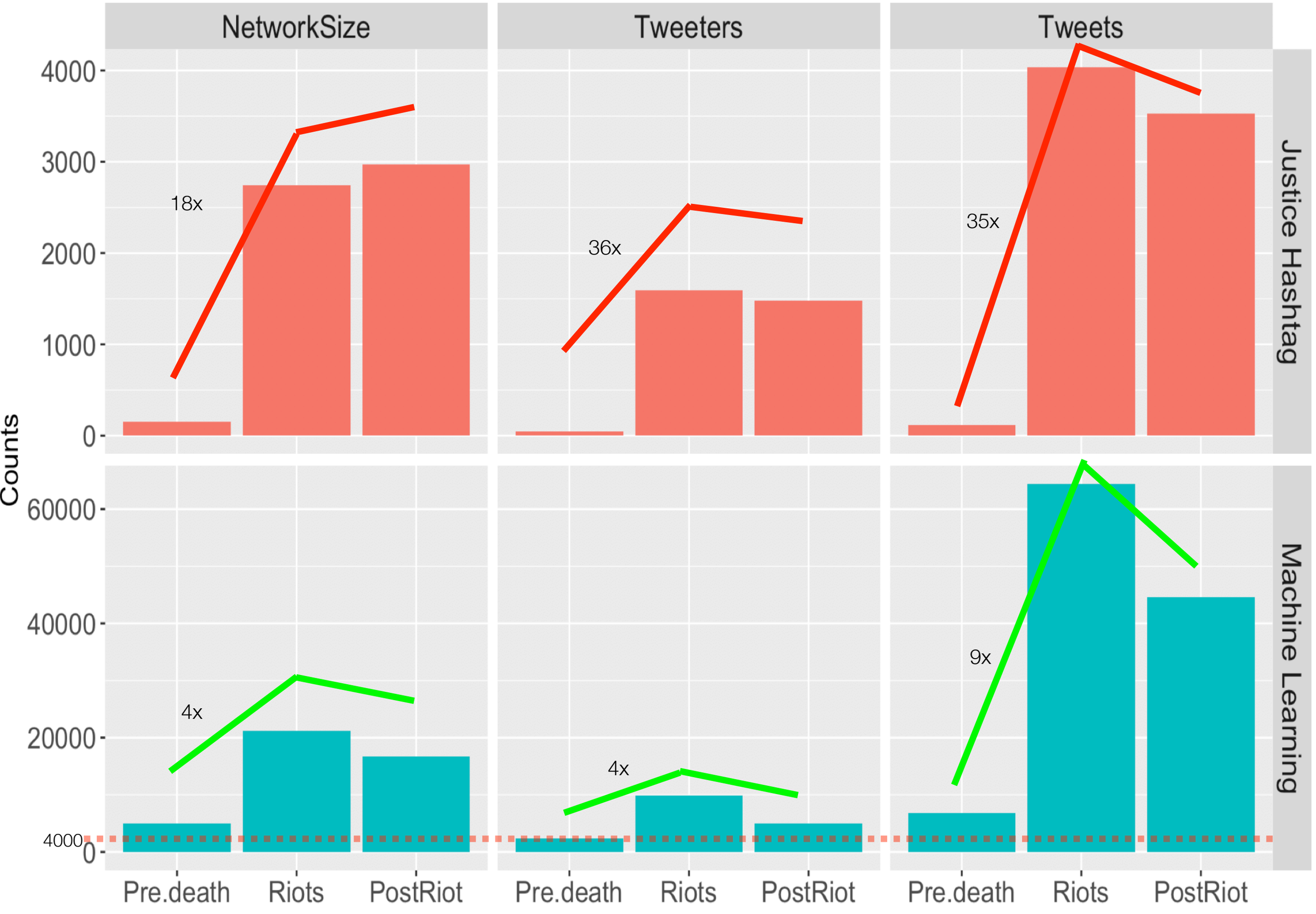
Crowds: .96

Police: 0.24

Riot: 0.08

#enrichment.normalized_liwc.Dic	27.27		
#enrichment.normalized_liwc.Sixltr	63.64		
#enrichment.normalized_liwc.WC	11		
#enrichment.normalized_liwc.adj	18.18		
#enrichment.normalized_liwc.affect	9.09		
#enrichment.normalized_liwc.anger	9.09		
#enrichment.normalized_liwc.api::Dic_count		3	
#enrichment.normalized_liwc.api::Sixltr_count		7	
#enrichment.normalized_liwc.negemo	9.09		
#enrichment.normalized_liwc.percept	9.09		
#enrichment.normalized_liwc.see	9.09		
#enrichment.normalized_liwc.social	9.09		
tenrichment.normalized_soundex_text	B163, P140, B435, A526, F632, B435, B43		
F630, G600, B435, R320			
#enrichment.normalized_text people #baltimore angry #freddiegray #baltimoreriots baltimore freddie gray baltimore riots			
#enrichment.original_liwc.Dic	50		
#enrichment.original_liwc.Sixltr	31.25		
#enrichment.original_liwc.WC	16		
#enrichment.original_liwc.adj	6.25		
#enrichment.original_liwc.adverb		6.25	
#enrichment.original_liwc.affect	6.25		
#enrichment.original_liwc.anger	6.25		
#enrichment.original_liwc.assent		6.25	
#enrichment.original_liwc.auxverb		12.5	


NetworkSize
Tweeters
Tweets
Justice Hashtag
Machine Learning
Count
60000
40000
20000
0
Pre.death
Riots
PostRiot

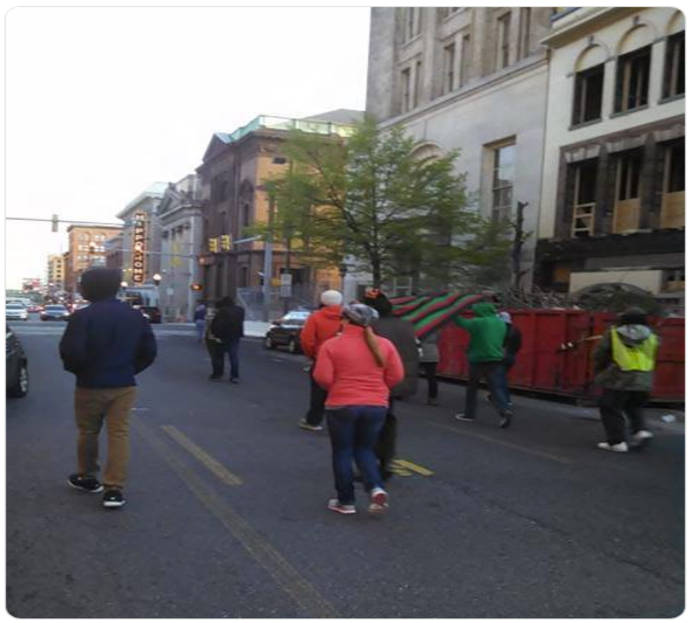

NetworkSize
Tweeters
Tweets
Justice Hashtag
Machine Learning
Counts
4000
3000
2000
1000
0
60000
40000
20000
4000
0
18x
36x
35x
4x
4x
9x
Pre.death
Riots
PostRiot
Pre.death
Riots
PostRiot
Pre.death
Riots
PostRiot

How precise are these methods?

100 randomly selected tweets from hashtag and ML data

Hashtag and ML precision very similar (91 true positive)

Taking the street #JusticeForFreddieGray #FreddieGray



4:11 PM - 24 Apr 2015

I don't understand why Zoe hates me 😩😩😩 @[redacted] #NoJusticeNoPeace #nobiracialfriends

4:31 PM - 29 Apr 2015

1

Tell them no but we have a citizen by the name of Freddie Gray who died from your officers who inflicted injuries.

Baltimore Police @BaltimorePolice

We have received several media inquires asking if we have an officer who was injured and in grave condition. THIS IS NOT TRUE

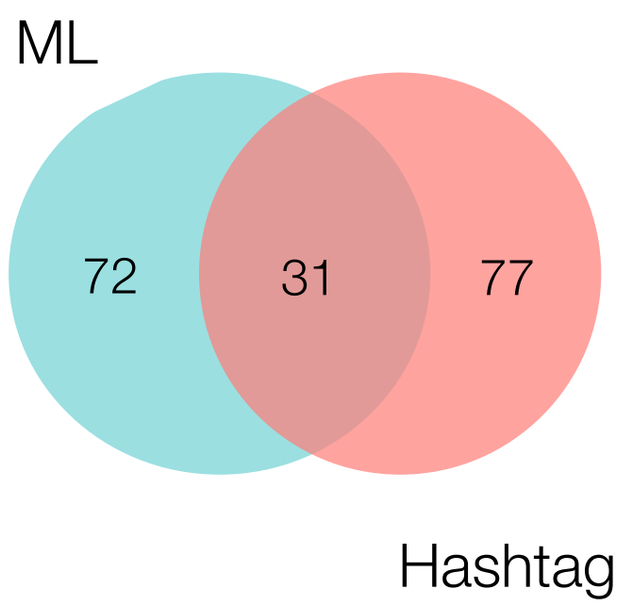
7:36 PM - 27 Apr 2015

The last riot at Camden Yards resulted with 4 Union solders from Mass. Getting killed#Civilwar

3:12 PM - 25 Apr 2015 from Overlea, MD

Are the same actors influential?

- Consider actors who rank in Top 50 for
  - Network In-degree,
  - Network Out-degree, or
  - Total justice tweets
- ~100 unique actors make threshold for each data set
- Only **31** appear in both
- Influential actors (based on machine learning)
  - In-Degree: **10** of top 50
  - Out-Degree: **23** of top 50
  - Tweets: **18** of top 50



Conclusions

Machine learning vs. hashtag-based approaches to identify justice-related discourse provide different perspectives on

- Amount of activity
- Number of participants
- Types of participants
- Network size and structure
- Temporal patterns

Some of the most prolific tweeters, and influential network actors, **rarely/never** use hashtags

Reliance on a hashtag-based approach risks systematically distorting our understanding of digital engagement with contentious social issues such as justice

Thank You!

Questions?

Comments?

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Rage, Flower Thrower - Banksy